

WHAT IS CLAIMED IS:

1 1. An interference cancellation (IC) method
2 comprising the steps of:
3 receiving signals from at least two users, said
4 received signals forming respective signal data streams;
5 and
6 performing an interference cancellation (IC) process
7 on a given portion of each of said signal data streams,
8 each said given portion being within a common window,
9 whereby respective interference between each of said
10 respective data streams is minimized.

1 2. The method according to claim 1, further
2 comprising, upon completion of said performing step, the
3 step of shifting said common window to another portion of
4 said signal data streams.

1 3. The method according to claim 2, wherein said
2 common window has a given window size, said method
3 further comprising the step of modifying, after said step
4 of shifting, said given window size.

1 4. The method according to claim 2, wherein said
2 step of shifting further comprises the step of:
3 shifting said common window by a full window length.

1 5. The method according to claim 2, wherein said
2 step of shifting further comprises the step of:
3 shifting said common window by a fractional window
4 length.

1 6. The method according to claim 1, wherein said
2 step of performing is repeated a plurality of times on
3 said given portion of said respective signal data
4 streams, within said common window.

1 7. The method according to claim 1, wherein said
2 common window has a constant window size.

1 8. The method according to claim 1, wherein said
2 respective signal data streams comprise symbols therein.

1 9. The method according to claim 1, further
2 comprising the step of:

3 determining, at the end of said common window, at
4 least one symbol within at least one of said respective
5 signal data streams, said at least one symbol extending
6 outside said common window, wherein, in said step of
7 performing, said IC process processes said at least one
8 symbol.

1 10. An interference cancellation apparatus in a
2 telecommunication system, said apparatus comprising:

3 receiving means for receiving signals from at least
4 two users, said received signals forming respective
5 signal data streams; and

6 performing means for performing an interference
7 cancellation (IC) process on a given portion of each of
8 said signal data streams, each said given portion being
9 within a common window, whereby respective interference
10 between each of said respective signal data streams is
11 minimized.

1 11. The apparatus according to claim 10, further
2 comprising shifting means for shifting, upon completion
3 of said performing means, said common window to another
4 portion of said signal data streams.

1 12. The apparatus according to claim 11, wherein
2 said shifting means shifts said common window by a full
3 window length.

1 13. The apparatus according to claim 11, wherein
2 said shifting means shifts said common window by a
3 fractional window length.

1 14. The apparatus according to claim 10, wherein
2 said performing means further comprises repeating means
3 for repeating said IC process a plurality of times on
4 said given portion of said respective signal data
5 streams, within said common window.

1 15. The apparatus according to claim 10, wherein
2 said common window has a given window size, said
3 apparatus further comprising modifying means for
4 modifying said given window size.

1 16. The apparatus according to claim 10, wherein
2 said respective signal data streams comprise symbols
3 therein.

1 17. The apparatus according to claim 10, further
2 comprising:

3 determining means for determining, at the end of
4 said common window, at least one symbol within at least
5 one signal data stream, said at least one symbol
6 extending outside said common window, wherein said
7 performing means performs said IC process on said at
8 least one symbol.

1 18. A wireless telecommunications system comprising:
2 a receiver for receiving signals from at least two
3 users, said received signals forming respective signal
4 data streams; and
5 a processing unit for performing an Interference
6 Cancellation (IC) process on a given portion of each of
7 said signal data streams, each said given portion being
8 within a common window, whereby respective interference
9 between each of said respective signal data streams is
10 minimized.

1 19. The system according to claim 18, further
2 comprising a memory unit connected to said receiver for
3 storing said respective signal data streams thereon, said
4 memory unit being coupled to said processing unit.

1 20. The system according to claim 19, wherein said
2 memory unit comprises a buffer memory, said processing
3 unit performs said IC process on said respective signal
4 data streams in said buffer memory.

1 21. The system according to claim 18, wherein said
2 processing unit further comprises a repeater for
3 repeating said IC process a plurality of times on the
4 respective given portions of said respective signal data
5 streams within said common window.

1 22. The system according to claim 18, wherein said
2 processing unit further comprises a shifter for shifting
3 said common window to another portion of said respective
4 signal data streams.

1 23. The system according to claim 18, further
2 comprising a determiner for determining, at the end of
3 said common window, at least one symbol within said
4 signal data streams, said at least one symbol extending
5 outside said common window, wherein said performing means
6 performs said IC process on said at least one symbol.

1 24. A memory storage device for storing a data
2 structure therein, said memory storage device comprising:
3 (a) receiving means for receiving data;
4 (b) performing means for performing an interference
5 cancellation (IC) process on a portion of said received
6 data, said IC process processing said portion within a
7 window; and
8 (c) shifting means for shifting said window.

1 25. The memory storage device according to claim
2 24, wherein said performing means repeats said IC process
3 on said portion of said received data within said window
4 a plurality of times.

1 26. The memory storage device according to claim
2 24, wherein said shifting means shifts said window by a
3 full window length,

1 27. The memory storage device according to claim
2 24, wherein said shifting means shifts said window by a
3 partial window length.

1 28. The memory storage device according to claim 24,
2 wherein said received data comprise symbols therein.

1 29. The memory storage device according to claim
2 24, further comprising:
3 determining means for determining, at the end of
4 said window, at least one symbol within said received
5 data, said at least one symbol extending outside said
6 window, wherein said performing means performs said IC
7 process on said at least one symbol.